



# **Reviewing the nature and level of interaction between seabirds and jigging vessels in the Falkland Islands**

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## **SUMMARY**

In September 2017, the Seabird Bycatch Working Group of the Agreement on the Conservation of Albatrosses and Petrels (ACAP) re-emphasised the need to review the knowledge of the extent of deliberate capture of ACAP species at sea globally. In response, and as a result of historic reports of deliberate taking of seabirds in the Southwest Atlantic and the Falkland Islands jigging fleet, the Falkland Islands Fisheries Department reviewed the nature and level of interaction between seabirds and jigging vessels operating inside the Falkland Islands Conservation Zones (FCZ).

With regards to incidental catches of seabirds in the jigging fleet, opportunistic observations are consistent with historic accounts, indicating negligible levels of interactions between seabirds and the jigging vessels operating inside the FCZ.

In terms of deliberate taking, the review concludes that, since 2006, there has been no clear evidence of this practice still occurring in the Falkland Islands jigging fleet. It is likely that increased management and educational efforts, as well as requests for improved humanitarian standards aboard the vessels, will have contributed to reducing the risk and attraction of deliberate taking of seabirds inside the FCZ. Whilst the available information strongly suggests that the practice is not entrenched in the fleet, opportunistic taking cannot be ruled out completely, warranting continued vigilance and educational efforts.

The report lists further work envisaged by the Falkland Islands Fisheries Department to help improve the confidence in the level of interaction between seabirds and the Falkland Islands jigging fleet, and which should assist with reducing the risk of deliberate taking of seabirds potentially prevailing in international waters.

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## 1. INTRODUCTION

In September 2017, the Seabird Bycatch Working Group of the Agreement on the Conservation of Albatrosses and Petrels (ACAP) was tasked afresh with reviewing the knowledge of the extent of deliberate capture of ACAP species at sea. This is to allow improved assessments of the cumulative levels of incidental and intentional capture of ACAP species in the fishing fleets. Several parties, including the UK, offered to work on a review of available knowledge in this regard.

The issue of deliberate taking of seabirds in the jigging fleet operating in Falkland Islands waters and on the wider Patagonian Shelf was originally reported in a report by Reid *et al.* (2006). The report highlighted that, although numbers of incidental catches of seabirds in the Falkland Islands jigging fleet were deemed negligible, the issue of deliberate taking was one that required further investigation and attention. While actions were taken to address the issue, no data or information has been issued since 2006.

In order to allow the Falkland Islands Fisheries Department (FIFD) to provide ACAP and other stakeholders with an up-to-date picture of our knowledge on seabird-fishery interactions in the Falkland Islands jigging fleet, this report aims to achieve the following:

- (a) Review the background and historic accounts of incidental and deliberate catches of seabirds in the Falkland Islands jigging fleet;
- (b) Review work conducted since 2006 in relation to incidental and deliberate catches of seabirds in the Falkland Islands jigging fleet;
- (c) Review all data and information available for the period of 2006 to 2017 on incidental and deliberate catches of seabirds in the Falkland Islands jigging fleet; and
- (d) List further work that will help improve the confidence in the level of interaction between seabirds and the Falkland Islands jigging fleet, and which will help address the issue of deliberate taking of seabirds in international waters.

## 2. THE FALKLAND ISLANDS JIGGING FLEET

The nutrient rich waters over the Patagonian Shelf support a great number of fisheries, including a large fleet of jiggers targeting Argentine shortfin squid (*Illex argentinus*). In austral summer-autumn, aggregations of *Illex* usually feed and mature in the southern part of the Patagonian Shelf including in the waters around the Falkland Islands (FIG 2018). Within the Falkland Islands Conservation Zone (FCZ), a fleet of 105 licenced squid jigging vessels operates annually between 15 February and 15 May (Taiwanese-flagged vessels) and between 15 February and 15 June (Korean-flagged vessels) (FIG 2018). The *Illex* jigging fleet is generally the largest operating in the Falkland Islands in terms of number of vessels and contributor to the Falkland Islands Government revenue, with licence fees constituting 50% of the total fisheries licence income (FIG 2018). The total catch of the Falkland Islands jigging fleet in the years of 2010 to 2017 averaged 124,970 tonnes (range 2,303 – 332,862) (FIG 2018).

### **3. HISTORICAL ACCOUNTS OF SEABIRD INTERACTIONS WITH THE FALKLAND ISLANDS JIGGING FLEET**

#### **3.1. INCIDENTAL INTERACTION**

Prior to March 2003, no dedicated seabird interactions observations took place in the Falkland Islands jigging fleet (Sullivan 2004). In March 2003, and again in 2004, the Seabirds At Sea Team (SAST) conducted the first dedicated observations for the purpose of informing a National Plan of Action. Results from these preliminary observations indicated little interactions between the fishing gear and seabirds inside or out of the FCZ (Sullivan & Reid 2003). However, additional data were deemed necessary, given the size of the fleet, to draw more robust conclusions.

In 2004, a Jigger Directive was drafted by Falklands Conservation to provide a strategic approach over the course of four years to procure data on seabird interactions with jiggers operating inside Falkland waters (Sullivan 2004). An assessment of the Directive by Falklands Conservation in 2006/2007 (Wolfaardt *et al.* 2010) confirmed earlier fisheries observations that incidental mortality associated with this fishery is minimal (Wolfaardt *et al.* 2010). The Jigger Directive assessment did reveal, however, a potential issue of mortality through deliberate taking of seabirds in the jigging fleet (Wolfaardt *et al.* 2010).

#### **3.2. DELIBERATE CAPTURE**

In the early 2000s, information emerged that jigging vessels operating in the southwest Atlantic deliberately targeted seabirds, especially albatrosses, for reasons suspected to be for consumption. Such evidence came from a number of sources, including fishermen, yacht crew, Fisheries Observers and Fisheries Patrol Officers (Anonymous 2003; Sullivan & Reid 2003; S. Crofts, pers. obs. 2005; K. Passfield pers. comm. 2005; C. Freeman pers. comm. in Reid *et al.* 2006).

During three days of routine fisheries patrols amongst jiggers operating inside the FCZ in April 2003, a FIFD Fisheries Officer and the SAST Observer collected evidence on four separate occasions (two from one vessel) of black-browed albatross (*Thalassarche melanophris*) corpses floating in debris near jiggers (Sullivan & Reid 2003). Upon close inspection, the corpses had either their entire body or their legs and breast removed, and appeared to have been prepared for human consumption (Reid 2003; Sullivan & Reid 2003). On the same trip, the Fishery Patrol Officer questioned a captain of a vessel that held non-jigging fishing gear, who confirmed that albatrosses were “very good to eat” (Reid 2003). It should be noted that, at the time, the existing legislation under the Conservation of Wildlife and Nature Bill 1999 (Part ii 3(1)), which indicates that it is an offence to kill, injure, disturb or capture wild birds, only applied to the Falkland Islands Territorial Waters (i.e. out to 12 nautical miles from the coast) (Sullivan & Reid 2003).

In response to these initial reports, and as part of the Jigger Directive (Sullivan 2004), four dedicated cruises were conducted in 2005/2006 (of which three in international waters and one inside the FCZ) to assess the scale of intentional targeting of seabirds. Three cruises were conducted on the Fisheries Patrol Vessel (FPV) *Dorada* during routine patrols amongst jiggers. The fourth cruise was made on board the private yacht *Porvenir* by K. Passfield (Reid *et al.* 2006). In total, the four cruises conducted ten days of observations, of which four days within the FCZ. No direct take of seabirds was witnessed

during this period (Reid *et al.* 2006). However, the four cruises observed a total of eight carcasses of black-browed albatross floating among the jiggers, with at least one carcass observed on every cruise. The majority was found to be floating amongst kitchen and fish rubbish. The remains were collected and identified as a skin of a single torso, two left wings, one right wing and some part of a third left wing (Yates 2005). The authors noted that it would be impossible for the animals to have arrived in this condition without human intervention, and described the skinned carcasses to be consistent with a bird that had been prepared for consumption (Yates 2005; Reid *et al.* 2006). Including the carcasses seen in 2003 (Sullivan & Reid 2003), a total of 13 complete days of observations revealed 12 carcasses, of which five were recovered inside the FCZ.

Further to the carcasses, a number of vessels were identified using baited hooks and hand-held fishing line (Yates 2005; Reid *et al.* 2006). Although it was impossible to directly establish what the various devices were used for (Reid *et al.* 2006), the line was observed at sea level on several occasions. One device consisted of a pole attached to monofilament line with what appeared to be a noose. Another device, seen only once, consisted of a glove attached to a monofilament line with a noose tied at sea level. Whilst jiggers use fishing rods and lines to target fish, these lines would typically be weighted and submerged. Lines lying at the surface with nooses and visual attractions (gloves) therefore were suspected to be intended for seabirds instead.

Reid *et al.* (2006) concluded that the collection of carcasses from the waters in direct vicinity of jigging vessels, in addition to photographic evidence of fishing in surface waters, implied that jigging vessels were, to some extent, targeting seabirds for consumption in waters of the Patagonian Shelf, including the FCZ. Using various methods and assumptions, it was estimated that the rate of targeted seabird mortality in the southwest Atlantic jigging fleet may lie anywhere between 169 and 45,000 birds per year (Reid *et al.* pers. comm. 2018). Reid *et al.* (2006; pers. comm. 2018) highlighted, however, that the results from the dedicated cruises were insufficient, and assumptions used for analyses too tenuous, to derive a robust estimate on the magnitude of mortality through deliberate taking. Importantly, the issue of deliberate taking was recognised as one that required further investigation and attention. Reid *et al.* (2006) recommended the following actions in order to discourage the behaviour:

- i. Educational materials disseminated to all jigging vessels explaining the issue, protected status of the birds, and associated penalties;
- ii. Fishery Officers and Observers to collect information and report incidences;
- iii. Proactive approach to prosecutions of vessels harming seabirds or using devices intended for use targeting seabirds;
- iv. Review of charges to vessels with humanitarian issues for provisions;
- v. Pressure on a governmental level to flag states of jigging vessels;
- vi. Raising awareness on a national and international scale.

## **4. WORK SINCE 2006: TOOLS USED TO MONITOR AND DISCOURAGE SEABIRD INTERACTIONS WITH THE FALKLAND ISLANDS JIGGING FLEET**

### **4.1. INCIDENTAL INTERACTION**

#### **4.1.1. Observers**

Due to the historically low risk of incidental catches of seabirds in the Falkland Islands jigging fleet (see Sullivan 2004; Wolfaardt *et al.* 2010), no strategic seabird monitoring protocol has been in place since the assessment of the Jigger Directive in 2006. However, since 2006, FIFD Observers are annually deployed onto an average of 4.6 jigging vessels (range = 0 to 8 vessels) out of ca. 105 jigging vessels that make up the seasonal jigging fleet, in order to undertake biological sampling of squid (FIG 2018). In the absence of a distinct protocol, the Observers conduct opportunistic seabird observations, and report on these in the FIFD Observer reports to varying degrees of details (Section 5; Annex 1 Table A). Observers generally remain on the vessels for one to four weeks (average of 2.2 weeks per trip; a total average of 11.7 weeks per season).

### **4.2. DELIBERATE CAPTURE**

#### **4.2.1. Ordinance**

In 2008, the Falkland Islands Conservation and Wildlife Ordinance (1999) was extended to cover the full 200 nm limit of the Conservation Zones in order to help protect against the intentional catch of seabirds in Falkland Island waters. This law is reflected in the jigger licence condition Part 2 (see Appendix 1). As such, vessels found to be harming, killing or disturbing seabirds can be prosecuted.

The FIFD has undertaken to act upon any suspicion of targeting seabirds during spot checks, such as, if floating fishing gear is found deployed astern or feathers and body parts are found aboard. However, the Falkland Islands Government and Fishery Patrol do not control, or monitor, international waters.

#### **4.2.2. Education**

In an effort to raise awareness of seabird conservation and the Ordinance, educational posters were produced by Falklands Conservation in multiple languages and distributed by the FIFD licensing officer to all jigging vessels (Wolfaardt *et al.* 2010). However, the distribution of these posters was discontinued a few years ago, and the posters are now no longer displayed aboard all the jigging vessels.

#### **4.2.3. Inspections**

All vessels fishing inside the FCZ are inspected in port by the Fisheries Patrol Officers prior to being issued with a seasonal or annual licence. In addition, Fisheries Patrol Officers perform regular at-sea vessel boardings for spot inspections. Between 2010 and 2017, Fisheries Patrol Officers performed spot inspections on between 10 and 67% of jiggers per season (average of 40% out of an annual target of 30% of vessels; Meehan 2017). Amongst others, the vessels are checked for suspicious behaviour or evidence relating to the deliberate taking of seabirds.



#### 4.2.4. Observers

Observers are made aware of the Falkland Islands Conservation and Wildlife Ordinance (1999). Despite the absence of a dedicated seabird monitoring protocol, they are required to remain vigilant with respect to the potential issue of deliberate taking or other acts of misconduct, and to report on any issues observed or suspected.

#### 4.2.5. Humanitarian matters

Reid *et al.* (2006) highlighted that the problem of deliberate taking is a cultural one, and that it may be related to the crew conditions aboard the jiggers (Phillips *et al.* 2003). To address this aspect, a licence condition was included in 2015 to ensure the provision of proper food from the Work in Fishing Convention (J. Barton, pers. comm. 2018; Licence Part 3, Appendix 2). In addition, overseas fishing companies receive an annual Crew Care & Welfare information document that raises awareness of their duties and responsibilities in relation to crew welfare.

## 5. DATA SINCE 2006 RELATING TO SEABIRD INTERACTIONS WITH THE FALKLAND ISLANDS JIGGING FLEET

Data and information were collated through personal communication with the FIFD Fisheries Patrol Officers, the Director of Natural Resources and FIFD Observers, as well as by reviewing the 52 relevant FIFD Observer reports available since 2006 (2007 to 2017). Relevant information was extracted from FIFD Observer reports using the following individual keywords: “albatross”, “bird”, “DIM”, “MAX”, “OCO”, “petrel”, “PFG”, “PRO”, “prion”, “PUG”, “deliberate”, “food”, “intentional” and “meal” (Annex 1 Table A).

Of the 52 reports produced from 2007 to 2017, 45 reports informed to some degree on seabird interactions. A summary of the interactions reported in observer reports is provided in Table 1. Given the opportunistic nature of these observations, the information available from these reports should be treated as the minimum of interactions occurring. A list of species codes is provided in Annex 2.

**Table 1** Summary of interactions reported by FIFD Observers from 2007 to 2017. DIM = black-browed albatross; MAX = giant petrel, OCO = Wilson’s storm petrel; PFG = sooty shearwater; PRO = white-chinned petrel; SMP = Magellanic penguin.

Type of interaction reported	Details
<b>Incidental interaction</b>	
Seabirds present around the vessel	Primarily DIM, MAX, PRO, also OCO. Generally low <sup>1</sup> levels (<20), but can be high (>100s).
Seabirds feeding on squid around vessel	Primarily DIM, MAX, PRO; also OCO. Generally low (<20) levels.
Seabirds interacting with jigging gear	Reported in 33% of reports where feeding was observed; particularly DIM and MAX. In all cases, at

	least one bird became hooked or entangled.
Seabirds hooked on jigging lures/lines	Total 16 birds (11 DIM, 3 MAX, 2 SMP)
Seabirds on deck after being hooked	Total 11 birds (7 DIM, 2 MAX, 2 SMP)
Seabirds on deck after colliding with vessel	Total 11 birds (all PFG)
Seabirds on deck of unknown origin	Numerous OCO, 1 PRO, 1 MAX
Injury resulting from gear interaction	Suspected major injury or death (2 birds (both DIM)); apparently unharmed besides small puncture wound (5 birds); unquantified injury (2 birds); unknown (4 birds); not reported (3 birds)
Confirmed incidental mortality	Total 6 birds (all PFG), following vessel collision
<b>Deliberate capture</b>	
Suspected practice of deliberate capture of seabirds by crew	No direct evidence. 4 accounts of anecdotal information from reports in 2010, 2013 and 2014.

<sup>1</sup> Note that reference to bird presence or numbers in FIFD Observer reports was often provided in qualitative terms only.

## 5.1. INCIDENTAL INTERACTION

Information on incidental interaction between seabirds and jigging vessels is solely available from FIFD Observer reports. Of the 45 reports that reported on seabird related issues, five of these exclusively commented on whether or not mortalities had been observed. Thirty-eight reports informed of the presence of seabirds around the vessels, although on six occasions, there was no reference to regularity or abundance. Twenty-seven reports provided detail on abundance, including few (<20 birds; 67%), high (>100 birds; 19%) and few to high (14%). Note that reference to bird presence or numbers in Observer reports was often provided in qualitative terms only. Interactions were reported to increase during periods of offal discharge. Of the 38 reports that reported on seabird presence, only 20 reported whether birds were feeding. In two reports, the Observers specified that no feeding was seen.

### 5.1.1. Interaction with the gear

Of the 18 reports that informed of birds feeding on squid around the vessel, six (33%) reported observed interactions with the gear, involving hooking or entanglement. In total, 16 entanglement/hooking events were reported between 2007 and 2017 (11 black-browed albatrosses, three giant petrels (*Macronectes giganteus*), and two Magellanic penguins (*Spheniscus magellanicus*). Birds were caught on the lures by the wing, the leg, the beak or the webbing of their feet. Eleven of these birds were hauled and landed on deck (Table 1).

No confirmed mortality was observed from birds becoming entangled or hooked in the gear, although on two occasions, heavy interaction with the gear by a black-browed albatross resulted in major injury with potentially fatal long-term consequences (FIFD Observer reports 728 and 1001). For two further birds, unquantified injuries were reported; for four birds, the fate could not be determined as the birds were returned (alive) to sea before the Observer had a chance to make an assessment. For three of the birds, no comments were made in relation to injury, although they were all returned to sea alive. Five of the birds that became hooked suffered no apparent damage.

Mishandling of the birds landed was highlighted on three occasions. The Observers noted that it would be pertinent to distribute educational material in relation to bird handling, in order to ensure birds and crew are not harmed in the process of birds being returned to sea.

### **5.1.2. Vessel collision**

In addition to interactions with the gear, eight reports informed of birds being present on deck. These were primarily Wilson's storm petrel (*Oceanites oceanicus*). It is not known or detailed how the birds arrived on deck, but they were always found or shown to the Observer by crew unharmed (though it is perhaps less likely for a crew member to specifically show an Observer a dead bird). On two occasions, reports informed of the presence of a giant petrel and a white-chinned petrel (*Procellaria aequinoctialis*) on deck. It is not clear whether these arrived on deck after being hauled up on the gear, after colliding with the vessel, or simply after landing on the vessel.

On one occasion, 11 sooty shearwaters (*Ardenna grisea*) were witnessed to have collided with the vessel as the vessel steamed out of Port Stanley (FIFD Observer report 1000). It was presumed that the birds had become disorientated by the lights emitted by the jigger. Six of the birds collided fatally; the remaining five were returned to sea by the Observer apparently unharmed.

## **5.2. DELIBERATE CAPTURE**

### **5.2.1. Information held by the FIFD**

Based on information from the Fisheries Patrol Officers, no illegal activities in relation to deliberate taking of seabirds have been observed or suspected during inspections since 2006 (FIFD unpubl. data).

Based on the 52 FIFD Observer reports, 14 reports specifically informed that no evidence of deliberate taking was observed or suspected. In 34 reports, no specific comments were made in relation to deliberate taking. However, given the Observers' awareness of the rules and regulations, it is reasonable to assume that, had there been an observed or suspected incident, this would have been reported (Annex 1 Table A). On two occasions, Observers reported to have been alerted by the crew to the presence of a large seabird on deck. On a further three vessels, birds were handled with care and returned to sea swiftly without the obvious supervision of the Observer.

Whilst no direct evidence exists to support the ongoing practice of deliberate taking of seabirds in Falkland Islands waters since 2006, four reports provide anecdotal information that may warrant continued future vigilance in relation to the matter.

1. (2010, FIFD Observer report 814): An Antarctic skua (*Catharacta antarctica*) was seen in the water with an arrow in its chest. The Captain told the Observer that "Chinese vessels were targeting these birds for food".
2. (2013, FIFD Observer report 954): A group of cattle egrets (*Bubulcus ibis*) landed on deck. The Observer reported that "the crew were excited about a possible diet addition but the Observer stated that they were not to be eaten."

3. (2013, FIFD Observer report 962): A South American fur seal (*Arctocephalus australis*) was captured and killed by the crew. The evidence was hidden. Although this incident involved a seal and not a seabird, the illegal practice of deliberately capturing and harming a wild animal suggests that this practice may also happen for seabirds.
4. (2014, FIFD Observer report 1000): The Observer found an object on deck that he identified to be part of a DIM beak. Its origin was unknown.

### **5.2.2. Food quality**

The deliberate taking of seabirds is often linked to poor or insufficient food quality aboard vessels (see above). Based on information available from FIFD Observer reports since 2007, meals on the jiggers seem to primarily be of good standard, nutritional and plentiful. Only on two occasions, the food was described as very poor (FIFD Observer reports 731 and 1048). There is the possibility that the Observer's experience may not always reflect the crew's condition. However, vessels inspected by the FIFD Fisheries Patrol appear to be well supplied with food (J. Barton, pers. comm. 2018; A. Henry, pers. comm. 2018). The need or desire for crew to supplement their diet by illegally targeting birds is therefore considered unlikely.

### **5.2.3. Other relevant information**

It should be taken into consideration that the chances of finding or observing birds intentionally caught for the galley are extremely low. It must also be taken into consideration that direct observations of this nature may be less likely by Observers and Fishery Patrol vessels, as behaviour of crew is expected to alter in the presence of government officials. As such, it is appropriate to also consider other sources of information.

#### Information from yacht crew

The FIFD has received no information from yacht crew with regards to the potential issue of deliberate taking of seabirds inside the FCZ since 2006.

#### Black-browed albatross population trend

Reports of carcasses found amongst jiggers in 2003, 2005 and 2006 (Sullivan & Reid 2003; Reid *et al.* 2006), were all of the black-browed albatross species. The Falkland Islands archipelago represents an important area for this species, supporting over 70% of its global breeding population. The black-browed albatross species was listed as *Endangered* on the IUCN Red List between 2003 and 2012. However, population censuses revealed that the black-browed albatross population has been increasing at a rate of at least 4% per annum between 2005 and 2010 (Wolfaardt 2012; Birdlife International 2018), and is currently showing a stable trend (Crofts & Stanworth 2017). This has led to the species being downgraded to IUCN *Near Threatened* in 2013, and, more recently, to IUCN *Least Concern* in 2017 (IUCN 2018). As such, any potential deliberate taking of black-browed albatross occurring in the South West Atlantic would at present appear not to be to the detriment of the population.

## **6. SUMMARY & FURTHER WORK**

### **6.1. INCIDENTAL MORTALITY**

Opportunistic observations by FIFD Observers since 2006 are consistent with previous accounts indicating very low levels of interactions between seabirds and jigging vessels. The main type of interaction involves birds becoming hooked on the lures whilst feeding around the vessel, although collision with the vessel by birds is an additional, perhaps less frequent but overall more harmful, type of interaction. Seabirds are highly visually oriented organisms and are known to become disorientated at night in the presence of artificial lights (e.g. Merkel 2010). Recognising the non-systematic nature of seabird monitoring applied in the fleet over the past decade, a defined period of more strategic data collection may be warranted to draw more robust up-to-date conclusions.

### **6.2. DELIBERATE CAPTURE**

It is inherently difficult to reveal deliberate taking of seabirds on fishing vessels, particularly if, as is the case in the Falkland Islands, the act is illegal and in direct conflict with the licence conditions. The Falkland Islands Fisheries Department has, however, implemented all recommendations from Reid *et al.* (2006) relating to education, regulations, inspections and improved humanitarian standards that would greatly reduce the risk of such behaviour in Falkland Islands waters.

The past ten years have issued no clear evidence of deliberate taking of seabirds in the Falkland Islands jigging fleet. FIFD Patrol Officers have not observed or suspected any illegal activities in relation to the matter during at-sea spot-checks and port inspections since 2006. Based on FIFD Observer reports, four accounts of anecdotal material exist, warranting continued vigilance and educational efforts with regards to the issue, but which are in themselves weak to confirm the ongoing issue of deliberate taking of seabirds in Falkland Islands waters.

### **6.3. FURTHER WORK**

#### **6.3.1. Monitoring**

The FIFD intends to re-introduce a strategic seabird monitoring protocol by FIFD Observers. This will help to standardise recording and reporting of incidental captures and of observed or suspected incidents of deliberate taking.

#### **6.3.2. Education**

As a precautionary approach, educational poster in relation to seabird conservation and bird handling will be produced, and circulated to the fleet by the FIFD Licence Officer.

#### **6.3.3. International collaboration**

The current report is intended to assist ACAP's review on the international extent of deliberate taking of seabirds, by providing information specifically related to the Falkland Islands. In addition, the FIFD intends to continue to promote inter-institutional management whenever possible to tackle the issue of deliberate taking of seabirds in international waters.

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## ANNEX 1: INFORMATION FROM FIFD OBSERVER REPORTS

**Table A** Summary of seabird related information from FIFD Observer reports 2007 to 2017. DIM = black-browed albatross; MAX = giant petrel spp., PRO = white-chinned petrel, OCO = Wilson’s storm petrel; PFG = sooty shearwater, SMP = Magellanic penguin, CAA = Antarctic skua. Only the most commonly reported non-ACAP birds are listed for each interaction. Note that reference to bird presence or numbers was generally provided in qualitative terms only; the term used is quoted in quotation marks.

Report #	Year	Time spent on board the vessel (weeks)	Bird presence	Birds feeding	Birds interacting with gear	Birds entangled	Birds hauled	Birds harmed	Information on deliberate taking	Other relevant comments extracted from reports
681	2007	3	Not reported <sup>1</sup>	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	
685	2007	3.5	Yes (“common”)	Yes	No	No	No	No	No evidence	
695 / 694	2007	3.5	Yes (“>100”)	Yes	No	No	No	No	Not reported	
696	2007	3	Yes (“minimal”)	Not reported	No	No	No	No	No evidence	
697	2007	1.5	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	1 PRO found on deck unharmed, Observer unsure of its origin.
723	2008	5	Yes (“few”)	Not reported	No	No	No	No	No evidence	
726	2008	3	Yes (“few”)	Yes (“minimal”)	No	No	No	No	Not reported	
728	2008	4	Yes (“few”)	Not observed	Yes	Yes (1 DIM)	Yes (1 DIM)	Yes (1 DIM)	No evidence	Bird’s wing was crooked. Observer doubts a full recovery. 1 OCO landed but took off unharmed.
731	2008	2.5	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	
809	2010	2	Not reported	Not reported	Yes (1 DIM)	Yes (1 DIM)	Yes (1 DIM)	Not reported	Not reported	



Report #	Year	Time spent on board vessel (weeks)	Bird presence	Birds feeding	Birds interacting with gear	Birds entangled	Birds hauled	Birds harmed	Information on deliberate taking	Other relevant comments extracted from reports
811	2010	0.5	Yes ("minimal")	Not reported	Yes (1 SMP)	Yes (1 SMP)	Yes (1 SMP)	Minor	No evidence	
814	2010	2.5	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	See comments	Observer saw a CAA with a little arrow in chest. "The chief officer suggested that the bird had been hunted at by the crew of a Chinese vessel for eating. The arrow was small and maybe 25cm long. It is unknown where the arrow came from and who had shot at the bird. It is possible the bird was shot for "human consumption" from another vessel."
850	2011	0.5	Yes ("regular")	Not reported	Not reported	Not reported	Not reported	No	Not reported	
851	2011	0.5	Yes ("regular")	Not reported	Not reported	Not reported	Not reported	No	Not reported	
854	2011	1	Yes ("minimal")	Not reported	No	No	No	No	No evidence	
855	2011	1.5	Yes ("minimal")	Not reported	No	No	No	No	No evidence	
856	2011	1	Yes ("minimal")	Not reported	No	No	No	No	No evidence	
858	2011	1.5	Yes (abundance not specified)	Yes	Yes	Yes (1 SPM)	Yes (1 SPM)	No	Not reported	
859	2011	1	Yes (abundance not specified)	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	
909	2012	4	Yes ("low")	Yes ("minimal")	No	No	No	No	Not reported	
911	2012	3	Yes ("minimal")	Not reported	No	No	No	No	No evidence	

Report #	Year	Time spent on board vessel (weeks)	Bird presence	Birds feeding	Birds interacting with gear	Birds entangled	Birds hauled	Birds harmed	Information on deliberate taking	Other relevant comments extracted from reports
915	2012	3	Yes ("minimal")	Not reported	No	No	No	No	No evidence	
916	2012	2	Yes ("minimal")	Not reported	No	No	No	No	Not reported	1 OCO found by the crew on deck disorientated. Bird released unharmed.
917	2012	1.5	Yes ("minimal")	Not reported	No	No	No	No	Not reported	1 OCO found by crew member and shown to Observer. Bird released unharmed.
918	2012	1.5	Yes ("minimal")	Yes ("minimal")	No	No	No	No	Not reported	
954	2013	1	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	See comments	"[Cattle egrets] landed on the bow were they rested for a few hours before taking off again, The crew were excited about a possible diet addition but the Observer said that they were not to be eaten and so they got back to work and let the birds rest".
959	2013	2	Yes (abundance not specified)	Not reported	No	No	No	No	No evidence	
960	2013	2	Yes (abundance not specified)	Yes	No	No	No	No	No evidence	
961	2013	2	Yes ("high abundance")	Yes	No	No	No	No	No evidence	
962	2013	2	Yes (abundance not specified)	Yes ("some")	No	No	No	No	See comments	Fur seal caught manually & slaughtered. Evidence hidden when Observer arrived. "no other seabird or marine mammal mortalities were observed." "Bird abundance higher when discarding guts."
965	2013	2	Yes ("unimportant")	No	No	No	No	No	Not reported	

Report #	Year	Time spent on board vessel (weeks)	Bird presence	Birds feeding	Birds interacting with gear	Birds entangled	Birds hauled	Birds harmed	Information on deliberate taking	Other relevant comments extracted from reports
989	2014	3.5	Yes (“<5”)	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	
990	2014	1.5	Yes	No	No	No	No	No	Not reported	
998	2014	2	Yes (“a number of birds”, “often”)	Yes	No	No	No	No	No evidence	
999	2014	1.5	Yes (“often”)	Yes	No	No	No	No	Not reported	
1000	2014	2.5	Not reported	Not reported	Not reported	Not reported	Not reported	See comments	See comments	Observer finds object on deck that he identified to be part of a DIM beak. Its origin is unknown.  Eleven PFG recorded to have collided with the vessel after being dazzled by jigging lights on the bow. Six suffer broken wings or necks as a consequence of hitting the vessel. The remaining five were released by the Observer apparently unharmed or with minor injuries.
1001	2014	1.5	Yes (“1000s”)	Yes	Yes	Yes (1 DIM feathers)	No	Yes (1 DIM)	Not reported	Saw lures with clump of DIM feathers/flesh, indicating significant injury as a result. This is the first time the Observer has seen a direct seabird interaction with the jiggers fishing gear.
1002	2014	1.5	Not reported	Not reported	Yes	Yes (1 MAX)	Yes (1 MAX)	Unknown 1 MAX)	Not reported	
1007	2014	2	Yes (“few”)	Yes (“some”)	Not reported	Not reported	Not reported	Not reported	Not reported	

Report #	Year	Time spent on board vessel (weeks)	Bird presence	Birds feeding	Birds interacting with gear	Birds entangled	Birds hauled	Birds harmed	Information on deliberate taking	Other relevant comments extracted from reports
1038	2015	2	No observations						Not reported	
1039	2015	1.5	Yes ("some")	Yes	No	No	No	No	Not reported	
1041	2015	3	Yes ("few" to "many")	Yes	Yes	Yes (1 DIM)	Yes (1 DIM)	No (1 DIM)	Not reported	
1042	2015	2	Yes ("many")	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	
1048	2015	1.5	Yes ("a lot", ">50")	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	
1049	2015	2.5	No observations						Not reported	1 OCO seen on deck unharmed.
1053	2015	1.5	No observations						Not reported	
1055	2015	3	Not reported	Not reported	Yes (1 DIM)	Yes (1 DIM)	Yes (1 DIM)	Not reported	Not reported	
1092	2016	2.5	No observations						Not reported	
1093	2016	2	No observations						Not reported	
1132	2017	4	Yes ("very few" to "huge numbers", "regular")	Yes ("some")	Yes	Yes (2 DIM)	Partly (1 DIM)	Yes (1 DIM); unsure (1 DIM)	Not reported	
1134	2017	4	Yes ("regular", abundance not specified)	Yes	Yes	(2 DIM, 2 MAX)	(2 DIM, 1 MAX)	Apparently unharmed (2x) Unknown (2x)	Not reported	
1139	2017	4	Yes ("few" to "huge numbers" "regular")	Yes ("several")	Yes	Yes (2 DIM)	Yes (1 DIM)	Yes (1 DIM), Not reported (1 DIM)	Not reported	

<sup>1</sup> "Not reported" indicates that the author provided no specific information in relation to the relevant heading. With regards to information on deliberate taking, had there been a suspected or observed incident, it is reasonable to assume that this would have been reported.

## ANNEX 2: FIFD SPECIES CODES

FIFD Species code	English name	Latin name	ACAP-listed species
CAA	Antarctic Skua	<i>Catharacta antarctica</i>	NO
DIM	Black-browed albatross	<i>Thalassarche melanophris</i>	YES
MAX	Giant petrel spp.	<i>Macronectes giganteus</i>	YES
PRO	White-chinned petrel	<i>Procellaria aequinoctialis</i>	YES
OCO	Wilson's storm petrel	<i>Oceanites oceanicus</i>	NO
PFG	Sooty Shearwater	<i>Ardenna grisea</i>	NO
PUG	Great shearwater	<i>Puffinus gravis</i>	NO
SMP	Magellanic penguin	<i>Spheniscus magellanicus</i>	NO

**APPENDIX 1: THE FISHERIES (CONSERVATION AND MANAGEMENT) ORDINANCE 2005 FOR TARGET SPECIES *Illex argentinus* AND *Martialia hydesi*. LICENCE PART 2**

(Relevant sections only)

**B. Unbaited Lures**

B1. All lures must be unbaited. The use of baited lures to catch either fish or seabirds is strictly prohibited.

**C. Seabirds**

C1. No seabirds are to be captured, harmed or killed.

C2. Seabirds are the most threatened family of species in the world. The Falkland Islands has strict laws to protect all seabirds and marine mammals. It is a criminal offence to capture, harm or kill seabirds or marine mammals in the Falkland Islands, punishable by a fine of up to £4,000. The Falkland Islands Fisheries Department is actively enforcing the laws to protect seabirds and marine mammals.

**APPENDIX 2: THE FISHERIES (CONSERVATION AND MANAGEMENT) ORDINANCE 2005. FOR TARGET SPECIES *ILLEX ARGENTINUS* AND *MARTIALIA HYDESI*. LICENCE PART 3**

(Relevant sections only)

**Protection of Wildlife**

34. The master and crew of the vessel must not deliberately kill, injure or capture any wild bird or marine mammal while the vessel is in the fishing waters of the Falkland Islands.

**Responsibilities of Fishing Vessel Owners, Masters and Crew**

38. The fishing vessel owner, master and crew must ensure that fishing operations and crew management and relations are conducted in accordance with Article 8 of the Work in Fishing Convention.

39. The fishing vessel owner and master must ensure the provision of:

Food of sufficient nutritional value, quality and quantity, taking account of the dietary requirements of crew according to any medical requirements and religious and cultural beliefs.

b) Potable water of sufficient quality and quantity.

c) Accommodation compatible with Articles 25 and 26 of the Work in Fishing Convention.

## **Crew Care, Welfare & Employment Conditions**

40. The fishing vessel owner and the master must ensure that all crew have a Fisher's Work Agreement (or Crew Agreement) incorporating the particulars set out in Annex II to the Work in Fishing Convention.

41. The Fisher's Work Agreement must set out clearly the procedure and contractual terms for any crewman who wishes to terminate his contract of employment and be repatriated to his country of recruitment or country of repatriation under the work agreement.

42. The Fisher's Work Agreement must be carried onboard the fishing vessel and be available to crew in a comprehensible form and in a language the crew understand.

## **Crew Care, Welfare & Employment Conditions**

43. The fishing vessel owner and master must ensure that the fishing operations are conducted in accordance with Articles 31 – 33 of the Work in Fishing Convention.”

### **Note:**

Licence conditions 38-43 above refer to Articles of the Work in Fishing Convention, 2007. The Articles referred to are as follows:

## **PART II. GENERAL PRINCIPLES**

### **RESPONSIBILITIES OF FISHING VESSEL OWNERS, SKIPPERS AND FISHERS**

#### **Article 8**

1. The fishing vessel owner has the overall responsibility to ensure that the skipper is provided with the necessary resources and facilities to comply with the obligations of this Convention.
2. The skipper has the responsibility for the safety of the fishers on board and the safe operation of the vessel, including but not limited to the following areas:
  - (a) providing such supervision as will ensure that, as far as possible, fishers perform their work in the best conditions of safety and health;
  - (b) managing the fishers in a manner which respects safety and health, including prevention of fatigue;
  - (c) facilitating on-board occupational safety and health awareness training; and
  - (d) ensuring compliance with safety of navigation, watchkeeping and associated good seamanship standards.
3. The skipper shall not be constrained by the fishing vessel owner from taking any decision which, in the professional judgement of the skipper, is necessary for the safety of the vessel and its safe navigation and safe operation, or the safety of the fishers on board.

4. Fishers shall comply with the lawful orders of the skipper and applicable safety and health measures.

## **PART V. ACCOMMODATION AND FOOD**

### ***Article 25***

Each Member shall adopt laws, regulations or other measures for fishing vessels that fly its flag with respect to accommodation, food and potable water on board.

### ***Article 26***

Each Member shall adopt laws, regulations or other measures requiring that accommodation on board fishing vessels that fly its flag shall be of sufficient size and quality and appropriately equipped for the service of the vessel and the length of time fishers live on board. In particular, such measures shall address, as appropriate, the following issues:

- (a) approval of plans for the construction or modification of fishing vessels in respect of accommodation;
- (b) maintenance of accommodation and galley spaces with due regard to hygiene and overall safe, healthy and comfortable conditions;
- (c) ventilation, heating, cooling and lighting;
- (d) mitigation of excessive noise and vibration;
- (e) location, size, construction materials, furnishing and equipping of sleeping rooms, mess rooms and other accommodation spaces;
- (f) sanitary facilities, including toilets and washing facilities, and supply of sufficient hot and cold water; and
- (g) procedures for responding to complaints concerning accommodation that does not meet the requirements of this Convention.

## **PART VI. MEDICAL CARE, HEALTH PROTECTION AND SOCIAL SECURITY**

### ***OCCUPATIONAL SAFETY AND HEALTH AND ACCIDENT PREVENTION***

### ***Article 31***

Each Member shall adopt laws, regulations or other measures concerning:

- (a) the prevention of occupational accidents, occupational diseases and work-related risks on board fishing vessels, including risk evaluation and management, training and on-board instruction of fishers;



- (b) training for fishers in the handling of types of fishing gear they will use and in the knowledge of the fishing operations in which they will be engaged;
- (c) the obligations of fishing vessel owners, fishers and others concerned, due account being taken of the safety and health of fishers under the age of 18;
- (d) the reporting and investigation of accidents on board fishing vessels flying its flag; and
- (e) the setting up of joint committees on occupational safety and health or, after consultation, of other appropriate bodies.

### **Article 32**

1. The requirements of this Article shall apply to fishing vessels of 24 metres in length and over normally remaining at sea for more than three days and, after consultation, to other vessels, taking into account the number of fishers on board, the area of operation, and the duration of the voyage.
2. The competent authority shall:
  - (a) after consultation, require that the fishing vessel owner, in accordance with national laws, regulations, collective bargaining agreements and practice, establish on-board procedures for the prevention of occupational accidents, injuries and diseases, taking into account the specific hazards and risks on the fishing vessel concerned; and
  - (b) require that fishing vessel owners, skippers, fishers and other relevant persons be provided with sufficient and suitable guidance, training material, or other appropriate information on how to evaluate and manage risks to safety and health on board fishing vessels.
3. Fishing vessel owners shall:
  - (a) ensure that every fisher on board is provided with appropriate personal protective clothing and equipment;
  - (b) ensure that every fisher on board has received basic safety training approved by the competent authority; the competent authority may grant written exemptions from this requirement for fishers who have demonstrated equivalent knowledge and experience; and
  - (c) ensure that fishers are sufficiently and reasonably familiarized with equipment and its methods of operation, including relevant safety measures, prior to using the equipment or participating in the operations concerned.

### **Article 33**

Risk evaluation in relation to fishing shall be conducted, as appropriate, with the participation of fishers or their representatives.